



### Goal

**Better Information, Not Just More Data** – Rather than providing more data, ODOT's goal was to provide better information for making better decisions.

### Challenge

Integrate ODOT's existing computing capability, which consisted of a variety of platforms ranging from centralized mainframes and 300 departmental CADD systems, to more than 1,500 personal computers throughout the state.

### Solution

Evolve to a SUPRA® Server SQL integrated enterprise database structure – away from the existing functional systems that provided only limited interaction among components.

### Key Results

- Seamless integration of ODOT's non-SQL and SQL applications.
- System was up and running in a total elapsed time of approximately two months.
- Dramatic improvement in management reporting, such as contractor progress, project tracking, payment tracking, lien tracking, historical reports, and more.
- The time frame for generating contractor payments was cut by more than half.

Profile in success: **Ohio Department of Transportation**

## Helping ODOT Move Data into Information



### Situation

The Ohio Department of Transportation (ODOT) shoulders sole responsibility for moving people and products along the state's transportation systems. For example, its highway program alone supports over 88-billion vehicle miles annually. With massive amounts of data flowing through the agency each day, the IS challenge is growing. ODOT has turned to Cincom and its SUPRA Server database management system as the foundation for their major client/server application. This technology will network the agency's headquarters with 12 district offices, expediting highway contractor payments and managing material testing data.

The principles of good government, streamlined business processes and effective resource utilization are all helping to shape the ODOT organization of the future. Rather than more data, the goal is to provide better information for making decisions, and ODOT plans to invest significantly in technology to achieve this end. This forward-looking approach emphasizes the increased use of networked workstations, transparent data access and easy-to-use data analysis tools.

Development of ODOT systems using Cincom software began in 1983. Today, computing capability at ODOT exists on a variety of platforms ranging from centralized mainframes and 300 departmental CADD systems to more than 1,500 personal computers throughout the state. In addition, ODOT is connected to Ohio Data Network mainframes for access to statewide applications such as central accounting, personnel and payroll. It is ODOT's strategy to evolve to an integrated enterprise database structure – away from existing functional system boundaries – that provides only limited interaction among components. The agency is convinced that the advanced facilities in SUPRA Server are best suited for their plans.

"When the time came to consider an SQL environment, the options were to look at DB2 and Oracle in addition to SUPRA Server," says Bill Puckett, Bureau Chief for Information Support Services. Although both Cincom and IBM database software run at its sister agency, the Department of Administrative Services, ODOT was under pressure to go with DB2 because of its market presence. "However, we were able to fight off those forces because we are really happy with the products and services we've gotten with Cincom. Cincom has had a good reputation for migrating systems through the various platforms. Cincom also helps protect our investment by integrating our non-SQL and SQL applications. We couldn't do that at all with Oracle."

## The Client/Server Pilot

To familiarize themselves with the client/server capabilities of SUPRA, ODOT first developed a public auction application within its fleet management system to help the department divest itself of old and unwanted equipment. "The application uses Cincom's MANTIS® Application Development Suite on a file server to store the program code for the database server. It runs on Windows clients," explains Database Administrator Kurt Meyers. "From design to production, I would say total elapsed time was about two months." Puckett couldn't have been happier. "I was amazed," he says, "that we could get the system up and running in such a short amount of time."

ODOT was then ready to tackle a more encompassing project, the Construction Management System (CMS). Building this single system involves the re-engineering of the basic methods ODOT uses for managing massive highway construction projects.

"Within CMS, there are two major subsystems," says Puckett. "One is called Construction Administration. It takes care of highway contractors' payments, change orders and extra work contracts, as well as progress scheduling to show how well a contractor is doing against his completion date for the project. The other major component is Testing Administration; this side of the system deals with materials specifications and keeps track of over 990 different types of materials tests."

## Three Hundred Tables for CMS

"The CMS application running under SUPRA Server was developed using AD/Advantage® (Cincom's life cycle application generation system) and runs on Windows clients," says Meyers. "AD/Advantage itself is located on a file server and places calls through a gateway to the mainframe. There are 14 local area networks (one per district, plus one for the central headquarters office and one test system) each with its own data server. We hope to use the heterogeneous data management processor facilities in SUPRA Server to access our non-SQL data through MANTIS on the Windows clients."

## CMS Targeted for Data Distribution

"Some of the data may be captured on the PC and batch loaded into CMS," adds Puckett. "Some of it might be a direct connection into CMS through a modem. We're trying to get the data entry as close to the source as possible. We plan to distribute data to the location that owns it with SUPRA Server."

CMS provides for 300 concurrent users. "This system is definitely geared for the end-user at the construction sites," says Meyers. "For many of them, this is their first computer experience." ODOT is providing training, and enthusiasm is growing in the field.

Meyers predicts that in five years, the size of the CMS database will grow to 10 gigabytes. "We don't see CMS as being a high-volume system in the traditional sense. I think in terms of inserts, updates and deletes, it would range around 8,000-10,000 transactions a day. Construction engineers, however, record daily activities such as traffic information, equipment usage, material usage, etc., down to the n<sup>th</sup> detail for every project. That's where our highest number of transactions will come from."



## CMS Cuts Pay Cycle More than Half

Under ODOT's old construction estimating system, the time frame for generating contractor payments typically would stretch out for 21 days. "With the new system, it's now less than half that," says Puckett, "and if all of the individuals involved in the approval process are available, a payment could be processed in as little as two to three days."

"Another major benefit over the old system is management reporting," says Meyers. "We can readily generate an infinite number of reports such as contractor progress, project tracking, payment tracking, lien tracking, historical reports, and so on." Much of this information is passed on to other systems outside the realm of CMS. For instance, when a contractor is paid, there is an interface to the state accounting system, and the federal government is billed for their participation in that project.

"There will also be significant savings in terms of document flow," adds Meyers. The move away from a hard-copy, paper environment is an objective set forth in the ODOT architectural vision statement.

## The Right Vehicle for the Future

So what else is on the ODOT Information Systems agenda? Three additional SUPRA Server systems are currently under development, including real estate administration, highways maintenance management and health claims. A fourth system, which addresses pre-construction activities, maintenance and rating condition of Ohio's 42,000 bridges, will roll out soon. It is likely to incorporate multimedia features, says Puckett. "We are also investigating CADD diagram storage in SUPRA, and that could have some important imaging potential for us."

One thing is certain: the challenges of maintaining a transportation infrastructure on this scale will continue to expand. To keep pace, ODOT will need to take advantage of emerging technologies. Today, they are well on the road to client/server computing; tomorrow will bring distributed systems, multimedia, and more. But whatever the route, ODOT believes SUPRA Server from Cincom is the right vehicle for the long haul.

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